

Adams

THE EVOLUTION OF PEDIATRIC  
LITERATURE IN THE UNITED  
STATES.

By SAMUEL S. ADAMS, A.M., M.D.,

Washington, D.C.

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In conferring upon me the highest honor, you have materialized a dream of my professional youth that I might merit esteem; and it is gratifying to have attained it in this body of scientific workers. Now that you have made me your President, I am unable to express to you the gratitude that fills my heart, but in returning to the ranks, the desire to retain your favorable opinion will be as strong as it was prior to my elevation to the presidency.

In presenting to you "The Evolution of Pediatric Literature in the United States," a desire to place upon record, in chronological order, the various and numerous works on the diseases of children, written in this country during the past one hundred years, has been fulfilled. In order to accomplish this end, it was necessary to read critically every essay, pamphlet, and book, devoted to the diseases of infancy and childhood published during the century, which was faithfully done up to 1870; after this, only a few of the more prominent works could be included, as the pediatric field became so fertile that the literary productions were too plentiful for close scrutiny. The labor involved in this research entailed such a tax upon my time that at intervals I was tempted to abandon it, but the fascination of each succeeding work furnished a stimulus, which led me on. In many instances valuable information was gleaned from foot-notes, and essays were also traced by this means. The material comprising this

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\* An address by the President of the American Pediatric Society, at its Ninth Session, Washington, D. C., May 4, 1897.



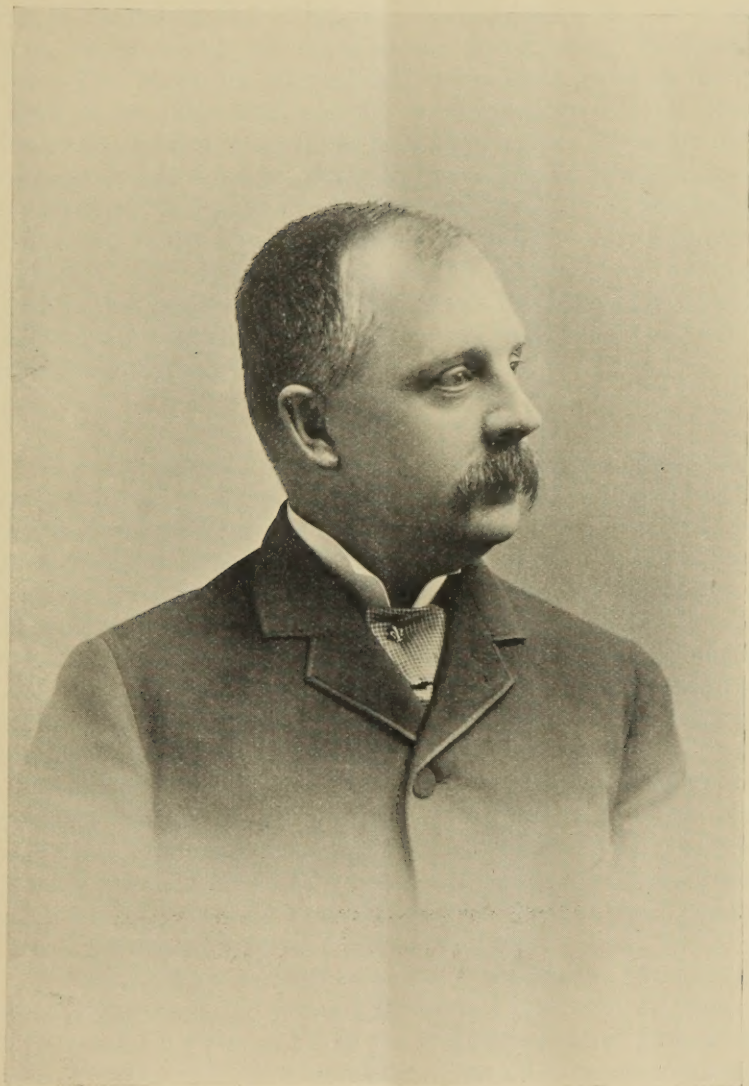
paper was found in public and private libraries. It is safe to assert that nothing dealing exclusively with pediatrics, published prior to 1870, has been excluded, except a few works on household medicine, certain pathies, and manuals for nurses, which were considered unworthy of mention. I have aimed to be fair in criticizing the different works, and have, in some instances, given due credit for a new or novel idea contained in an inferior book. Many foreign works were published in this country during the century, and were ably revised by Americans, but they were excluded as exotic. A number of masterpieces, devoted to the diseases of women and children, were also omitted from the list, because the children received such a small share of attention; indeed, in several works, it would be charitable to say that the authors mentioned the diseases of infancy owing to custom, and not from a knowledge of them. If any meritorious work on pediatrics, published during the first six decades, has been omitted, it has been overlooked.

Finding it impossible to include all the pediatric literature since 1870, I believed it would be pardonable to make a few selections from the standard works. In doing so, however, it must be understood that no reflection is cast upon the scores of valuable papers and inestimable labor of many scientific pediatricists in this country. Their writings are too familiar to need special comment. It is not intended to claim priority for Americans in the references to methods of treatment. Such methods may have been used in other countries, but the first recorded instances of their application to the diseases of children in this country should be placed to the credit of those named in this paper.

I have paid special tribute to two distinguished members of this Society from a sense of gratitude for the knowledge of the diseases of children which they have imparted to their juniors throughout many years, and believe the panegyric will receive your hearty endorsement.

RUSH, 1789.

The first American recognition of the peculiar manner in which disease affects children will be found in a clinical picture of grip, by Benjamin Rush, in "An Account of the Influenza, as it appeared in Philadelphia in the Autumn of 1789, the Spring of 1790, and the Winter of 1791." The disease is ushered in by



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hoarseness, sore throat, a sense of weariness, chills and a fever; pain in the head and eyes is intense; sneezing is incessant; the appetite and taste are lost; and in many the ears are affected. Pain in the breast, and cough, which alternated with pain in the head, are universal. At times nausea and vomiting are persistent. The limbs are affected with such acute pains as to be mistaken for rheumatism, or for the break-bone fever of 1780. The pains are most acute in the back and thighs. There are profuse sweats and a quick pulse. In four cases the whole force of the disease "fell upon the bowels, and went off in diarrhœa." The fever sometimes "terminated in tedious and dangerous typhus." The epidemic was marked by recurrent attacks. During the prevalence of this epidemic he inoculated twenty children for smallpox, and "never saw that disease exhibit a more favorable appearance."

CALDWELL, 1796.

The first pediatric monograph is an inaugural dissertation for the degree of doctor of medicine, examined and approved by the Medical Faculty of the University of Pennsylvania, and duly defended before the Board of that institution, on the 17th day of May, 1796, by Charles Caldwell, Fellow of the College of Physicians of Philadelphia, etc. The subject of this unique production is "An Attempt to Establish the Original Sameness of Three Phenomena of Fever (principally confined to infants and children) described by Medical Writers under the Several Names of Hydrocephalus Internus, Cynanche Trachealis and Diarrhœa Infantum."

In the introduction he says: "The frequent occurrences, the obstinate resistance and the melancholy effects of those phenomena of fever to which my present speculations are confined, will doubtless be admitted as a sufficient apology for every possible attempt to investigate their cause, to elucidate their nature, or to obviate with success their worst result.

"I have called them phenomena or symptoms, because I do not consider them as primary diseases; I shall treat of them as the dependent effects, not as the original cause of that febrile state of the system, by which they never fail to be accompanied. Without the previous existence of general fever, these phenomena can no more occur, than an effect can, in any instance, take place without the pre-existence and pre-action of its cause. They shall be considered then, in the following pages, as the genuine

and distinctive offspring of *arterial action*, morbid in its *nature*, excessive in its *violence*, and by causes of peculiar tendency, determined to the *encephalon*, the *trachea*, or the *intestines*."

The three diseases are the "immediate result of an evacuating process, which never fails to diminish the impetuosity and tumult of febrile action." This process is uniformly attended with more or less uneasiness and pain; but the stimulant effect of the latter occasioned by distention of the arteries and their efforts to discharge their irritating contents, is fully "counter-balanced by the powerful sedative tendency of the simultaneous evacuation."

The arguments adduced in support of this new theory were: (1) That the diseases were of a *general*, and not of a *local* nature; (2) that the topical affections were preceded by *general fever*; (3) that the diseases were confined to infants and children of similar age, similar constitution, and considerably alike in all their general habits; (4) that they suffer a reciprocal alternation with each other; (5) the *morbid processes* are evacuant; (6) that they are due to an impetus of the blood subjected to a certain degree of febrile action; and (7) that the same remedies are efficacious in all three.

It would lead me entirely beyond the scope of this address to quote extensively from this interesting dissertation. His ideas as to the etiology and pathology of these diseases were certainly original, and his clinical pictures complete, except that he evidently confounded cholera infantum with simple diarrhœa.

Since this is unquestionably the first article devoted exclusively to the diseases of infancy and childhood published by an American, a brief sketch of its author will be pardonable. Charles Caldwell, of pure Hibernian descent, was born in the province of North Carolina, May 14, 1772. He knew only the alphabet at his ninth year, but began the study of the classics in his twelfth. His parents having died in the beginning of his fifteenth year, he accepted the position of principal of the Snow Creek Seminary. He began his medical studies at the University of Pennsylvania in 1792, being in his twenty-first year. His scholarship was thorough and accurate; and his physique most majestic. He anonymously criticised Rush's lectures. In 1793, during the terrible epidemic of yellow fever in Philadelphia, he was the only student to remain, and was placed in charge of a hospital at Bush Hill by Dr. Rush. He opposed Rush and his followers in the contagiousness of yellow fever. Washington



appointed him regimental surgeon in the whiskey rebellion in Western Pennsylvania, and when this was settled he resumed his studies, graduating in 1796. In 1797, when yellow fever again prevailed in Philadelphia, Rush was violently abused in the public press, but Caldwell, under an assumed name, defended him in a masterly manner. During his service in the Army he wrote to Dr. Rush that he was "overtaken by a shower, was wet to the skin while laboring under a high fever; the fever left him in consequence of the shower-bath, and never returned." Rush, in reciting this instance of the reduction of fever by unavoidable hydro-therapy, failed to give due credit to his pupil—an offence which caused a rupture that was never healed. In 1803 he instituted the first clinical lectures in the Philadelphia Alms House. In 1819, having declined to go to Baltimore and New York, he accepted the Chair of the Institutes of Medicine, specially created for him, in the Transylvania University, at Lexington, Ky. Four attempts had been made to establish a college, so it remained for him to make the fifth successful. In 1837 he was called to Louisville to organize the medical school. In 1849 he informed the trustees that he would retire in March, 1850, but the Board anticipated him, declared the place vacant, and offered him an emeritus professorship, which he declined, because "they had nothing to confer which to him would be honorary; that not only was he the founder and constructor of his own honors, but that he was virtually the author of all the academical honors possessed by them."

## STUART, 1806.

Dr. James Stuart, January 22, 1806, presented in this country the first recorded necropsy of "a case of cholera infantum, apparently benefited by the use of nitric acid," as follows: "The omentum had nearly disappeared; the stomach was distended, and contained nourishment recently taken; the pylorus was much contracted. Duodenum contracted to half its normal size; liver dark; gall-bladder distended; ileum normal; colon and rectum size of a crow's quill; mesenteric glands obstructed through whole extent; spleen pale and contracted; and kidneys enlarged."

## AMERICAN MATRON, 1810.

"The Maternal Physician: A Treatise on the Nurture and Management of Infants, From the Birth Until Two Years Old.

Being the Result of Sixteen Years' Experience in the Nursery. Illustrated by Extracts From the Most Approved Medical Authors. By an American Matron. Philadelphia, 1810."

It seems singular that, with the intelligence that pervaded the medical profession during the first decade of the nineteenth century, the first book on the management and feeding of infants should have been written by a layman who concealed her identity. The work is not without merit, and would form a readable essay if robbed of its quotations from Buchan, Underwood, and others. The work is dedicated to the author's mother in language that thrills the patriotic heart: "That helpless babe which reposed on your affrighted bosom when you fled the vicinity of Boston on the day of the ever memorable battle of Lexington, now a wife, a mother, and near the meridian of life, as a small tribute for all your maternal cares, most respectfully addresses this little volume to your perusal; candidly confessing that all which is valuable in it she derives from you.

"For the nurture of my infancy I am most grateful—but for my education, and, above all, for the sublime lesson you taught me 'that the best pleasures of a woman's life are found in the faithful discharge of her maternal duties,' I owe you more than gratitude.

"May you find an ample recompense in the assurance that from your grandchildren I receive that filial love and respect which has ever been rendered you by your daughter Mary."

The author was attracted by the large number of obituaries to children under two, and was impressed that such a high death rate was occasioned by some gross mismanagement in mother or nurse, or in both. She then looked upon her own children, and her heart "swelled with gratitude to heaven for hitherto averting the shafts of the fell destroyer from them, and permitting the roses of health to bloom on their cheeks." She acknowledges herself indebted to many physicians for useful hints, "but these gentlemen must pardon me if I think, after all, that a mother is her child's best physician, in all ordinary cases." Eight lovely and beloved children, who had all (except the youngest) passed through the usual epidemics, and then enjoyed an unusual proportion of health and strength, were the best apologies she could offer for presuming to give advice unasked, and perhaps undesired, to her fair countrywomen. The mode of treatment was founded upon her own experience, but was



*enriched* by frequent and liberal extracts from the principal medical authorities of the day. Section I. is on the proper treatment of infants under the age of four months. As a mark of good nursing, cleanliness is especially emphasized. She bathed her own baby, aged four months, daily in very cold water. There is good advice on clothing, and the fashion of the day is severely criticised. While she contended that the mother's milk is the best and only *proper* food for infants, she admitted that in some cases a substitute is necessary, when cow's milk, diluted one-half with water and sugar, is the proper food, and assails "paps and other crudities."

She cut the frænum of the tongue in every child, and recommends it in a graphic manner. In dentition, "a cork to bite on, and syrup of white poppies," are recommended, but infants fed exclusively upon milk escape its perils. She hopes lancing the gums will become universal, and advises mothers "to cut them with a very keen razor while the infant sleeps, and avows that they never awaken from it."

The chapters on teaching infants the right use of their hands, the best time and method of setting infants on the feet, and weaning and diet afterwards, contain some good advice, although one of her children nearly died from undigested veal. The chapter on correcting the disposition and temper reminds us of the modern psychologist who endeavors to regenerate child-life by basing his edicts upon the study of his only child. How well the author corrected a selfish disposition in one of her boys can be judged from the closing of this chapter: "I was here almost tempted to address a word or two of advice to *fathers*; but my own good man, who sits laughing on the sofa, whilst his favorite little Joseph is drawing his watch tied to a string round the carpet for a plaything, and who just now *looked* as if he thought me cruel for refusing the dear, enchanting little innocent my inkstand dish for a go-cart, might esteem it too *presuming*." Some of her methods of treatment, like dressing diseases of the navel with roasted raisin and grated nutmeg, may unfold a sacred page to those skilled in the use of modern æsthetic therapeutic measures. Her treatment for snuffles, with topical applications to the ridge of the nose, soles of the feet, injections of breast-milk from the nipple, and her cures for fever, from taking cold, are unique, if not amusing. The following treatment for dysentery met with her favor: "An emetic of ipe-



cac; drink freely of camomile tea, the antiseptic properties of which are peculiarly adapted to the nature of this disease; mucilaginous herbs; opium, rhubarb and calomel; roots and leaves of the running blackberry; flaxseed and hyssop when there is much fever; fresh burdock leaves should be laid upon the table and rolled with a kitchen rolling-pin, and then held before the fire until soft and pliable, when they should be bound around the feet; cleanliness about the bed and room; and the use of disinfectants." She believed in the contagiousness of dysentery, as several of her children had it.

Not only is she entitled to the credit of being the first American pediatric author, but her dissent from the views entertained by foreign writers on the management of infants is worthy of praise. The recognition of the infectious nature of dysentery, and its treatment by ipecacuanha and intestinal antiseptics, was an innovation which was not appreciated by the most intelligent practitioners until a comparatively recent date.

JACKSON, 1812.

Dr. James Jackson (1812). Cholera Infantum—Necropsy. "Liver very large; gall-bladder distended and flaccid, with dark green bile. Spleen and pancreas normal. Spots of congestion on peritoneum. In every case marks of disease on the mucous membrane. Red or purple spots on the mucous membrane of the stomach, which was lined with adhesive mucus. Inflamed and swollen spots throughout small intestines, but marks of disease in large intestine rare. In one case throughout the small intestines were numerous small ulcerations resembling the *ulcuscula oris* (or canker spots)."

MILLER, 1814.

Dr. Edward Miller seems to have confined his pediatric literature to an article on "The Cholera, or Bilious Diarrhœa of Infants," published in 1814, but in this one effort we find the first reference to the cold bath (95° to 85°) in the treatment of fever, and the efficacy of cold or iced water injected into the intestine, as an "anodyne, sedative, and anti-spasmodic." In the application of the graduated bath for the reduction of high temperature, and irrigation of the intestine with cool water for the relief of tormina and tenesmus, the pediatricist of to-day should not fail to realize the fruition of the prophetic dream of Miller.

LOGAN, 1825.

"Practical Observations on Diseases of Children, Comprehending a Description of Complaints and Disorders Incident to the Early Stages of Life, and Method of Treatment. By George Logan, M.D., Honorary Member of the Medical Society of South Carolina, and Physician to the Orphan House, Charleston, 1825."

Fifteen years have elapsed since the American Matron published her book, and George Logan presents the second American work on the diseases of children. This author is impelled by "a sense of duty, and not the ambition of being an author," to publish his experience in the treatment of the diseases of infancy. It is fortunate for the child that this is Logan's only effort in the literary field of pediatrics. The first reference to the application of splints for the correction of deformed feet is found, however, in this work. He also advises that excoriations of the navel and behind the ears should be healed—a suggestion hitherto discouraged—and his views on infant feeding are likewise worthy of reproduction. "When the child cannot be supported by the breast, the food intended for it should be made to resemble *human* milk as much as possible in all its properties. He should be fed by means of a *sucking-bottle*, or from the spout of a teapot (or some vessel of that kind), a piece of soft cloth being previously tied over it and *perforated*. The child will soon acquire the habit of sucking his *nourishment* from these. The gradual manner in which *it* is thus conveyed into the stomach, the pressure of the mouth upon the bottle, etc., in imitation of the nipple, affords time for a necessary flow of saliva, consequently digestion is more complete, and the child is not so frequently distressed with griping and pain, as when the spoon is employed." Weaning should never take place in April or May, but the reasons are not given.

DEWEES, 1825.

In 1825 Dr. William P. Dewees, Lecturer on Midwifery in the University of Pennsylvania, published a treatise on the physical and medical treatment of children, which marked the dawn of scientific work in a field that had previously been almost entirely consigned to the care of ignorant nurses, whose principles of treatment were founded upon superstition and conceit. This distinguished luminary in the American pediatric firmament had the temerity to boldly strike at the hitherto impenetrable barriers

of the management of the infant in health and disease, and by enforcing his convictions on their physical treatment, opened a field of study that has never flagged since its inception. If Dewees had only accomplished the one reformation of delivering the child from the incarceration of the swaddle, that was sufficient to entitle him to the plaudits of succeeding pediatricists.

Those of us who decry the dress of to-day because it prevents the proper exercise of the infant's limbs, and yet fail to convince the young mother that her child is being injured, will appreciate the difficulties encountered by one man battling against a time-honored custom. The work begun by him succeeded so well that but few of us have witnessed the tortures so graphically described by Dewees.

"Swaddling consists in entirely depriving the poor infant of the use of its limbs, by their being enveloped in an endless length of bandage, so as to be made to resemble billets of wood; and by which the skin is sometimes excoriated and the flesh compressed almost to gangrene; the circulation nearly arrested; and the child without the slightest power of motion. Its little waist is surrounded by stays, and of such stiffness, and such strictness of application, as to forbid flexion either backward or forward, or, indeed, motion of any kind. Its head is compressed into the form the fancy of the midwife might direct, and its shape maintained by properly adjusted pressure by means of bandages. In fact the talents of the midwife were estimated at this time by her dexterity in the application of swathes, rather than by her professional requirements. When the child is completely dressed in its bandages, it resembles by far too nearly the form of an Egyptian mummy, and, like its prototype, may, it is said, be thrown anywhere, since the swathing prevents injury from rudeness."

He advises the father to relieve the overburdened mother by directing the child's physical education, but fails to admonish him against shirking the duty of sharing the labor of rocking the cradle, which is extolled as an indispensable part of the equipment of the nursery. "The production of fatuity by constantly shaking the brain" would be due to its abuse rather than to its judicious use. Harm might result from violent agitation of the cradle, but no such injury could possibly result from its careful use; "for did gentle agitation do mischief to the organization or functions of the brain, why are not all children born fatuitous, since this organ is subjected to it from its earliest formation?"



After describing the method of using it, he sums up its advantages: "(1) It can be placed in any situation in the room without disturbing the child, for the advantage of either warmth or coolness, for light or darkness, or for air; (2) it supplies the most gentle and certain anodyne, if we may so term it; since it will amuse by its motion where the child is placed in it when awake; lull by its sameness when disposed for sleep, and perpetuate it, when desirable, by a familiarity with its action; for it must be recollected that for nine months previous to birth, the child has been indulged in the gentlest motion, in the fluid in which it constantly swims; consequently the motion of a cradle would seem to be but a continuation of an exercise it had been long used to."

Dewees had a clearer idea of substitute feeding than his predecessor, but he advised beginning the feeding with two-thirds milk, one-third water and a small quantity of loaf sugar, and proscribed every other mixture. He criticised severely the reprehensible habit of the nurse in letting the child's food pass through her mouth. He advised against giving too much food at a time, and preferred small quantities at shorter intervals. (1) The milk should be pure; (2) one cow's milk; (3) it must be used as soon as possible after being mixed; (4) should not be mixed until wanted; (5) should never be heated by fire, but by a hot diluent or a sand bath; (6) must be kept in a cool place; (7) we must never attempt to restore acid milk. "All the advantages can be procured without its being absolutely boiled, and then cooled as speedily as possible." After giving some wholesome advice about the care of the utensils used in the preparation of food, he says "mischief sometimes arises from a fastidious desire of improvement. The necessity for alteration should always be ascertained before the change is made; for it would be more than idle to insist upon a change of diet while the child is rapidly, or even perceptibly improving; especially as the quantity of its food can be readily increased in the precise ratio of the necessity for such increase."

In opening the section on the diseases of children Dewees uses this significant language: "Hitherto no one on this side of the Atlantic has thought proper to give to the public at one view the American practice in the diseases of children. This supineness of our physicians is no less surprising than reprehensible; especially as many are so well qualified for the task by their

talents, and experience, and moreover as such strong inducement was held out by the peculiar character of our diseases and, in many instances, by the novelty and boldness of the mode of treatment."

Jaundice is treated with small doses of calomel and soda.

Aphthæ is regarded as contagious and epidemic, usually symptomatic, but does not involve the entire gastro-enteric tract. Its treatment is identical with that employed at present. Hydrocele is treated by letting two quarts of water fall from a height, through the spout of a teakettle, upon the part.

This is the first book to give the morbid anatomy of cholera infantum, and its treatment by injections of salt and water and the warm bath is worthy of special mention.

Scarlet fever is regarded as epidemic but not contagious, and, when accompanied by high fever, is treated by cold spongings and ablutions.

Many other valuable suggestions might be culled from this book, but enough have been adduced to show that the author was far in advance of his contemporaries. While he does not state the temperature to which the milk should be subjected in preparing it for the infant, nevertheless he distinctly asserts that boiling is unnecessary, provided it is rapidly cooled. Since no small part of the success of the present method of low sterilization is due to the rapid cooling of the milk, it would seem but fair to divide the glory between Dewees, who first advanced the idea, and Pasteur, who perfected it.

Again, the introduction of cold spongings and ablutions into the treatment of scarlet fever should entitle this author to the glory of inaugurating one of the greatest blessings of pediatrics.

PARRISH, 1826.

Dr. Joseph Parrish, surgeon to the Pennsylvania Hospital, published, in January, 1826, "Observations on a Peculiar Catarrhal Complaint in Children" that bore a striking resemblance to ordinary catarrh in adults, sometimes presented a dangerous character, and always required different treatment. The symptoms were such as to mislead the young practitioner into believing that inflammation of the lungs existed. The cases could not always be diagnosed, but the most prominent symptoms were paroxysms of dyspnœa, resembling attacks of asthma, feeble pulse, and cold skin. "Cold cheek" he regarded as a

pathognomonic symptom. The necropsy showed "not the least vestige of inflammation; there was some effusion into the bronchial tubes, but it was such as often occurs, not only where no inflammation has existed, but also in cases of extreme debility. From the result of this examination I inferred that there was, in the pulmonary organs of these children, a debility, which both invited disease and, after its attack, prevented a return to healthy action." Treatment consisted in anti-spasmodics, expectorants, blisters, and the warm bath.

FLINT, 1826.

Dr. Joseph H. Flint presented a "Dissertation on the Prophylactic Management of Infancy and Early Childhood" to the Massachusetts Medical Society, June 7, 1826. It contains nothing new or original, but abounds in quotations in prose and poetry. He deserves, however, credit for emphasizing the idea that "physical culture is to the body what moral culture is to the mind."

PAGE, 1829.

Dr. M. Page, of Richmond, Va., published in January, 1829, "An Essay on the Diseases of Children." This article is well written, but contains nothing of interest to us.

HORNER, 1829.

Dr. William E. Horner, adjunct professor of anatomy, University of Pennsylvania, published in January, 1829, "An Inquiry Into the Anatomical Characters of Infantile Follicular Inflammation of the Gastro-Intestinal Mucous Membrane, and its Probable Identity with Cholera Infantum."

He regretted that cholera infantum was not better understood to place it upon "a sure and perfect pathological foundation," and laments the fact that in spite of its frequency he found but one record of a necropsy in the literature of the past twenty years. Had he been supplied with the *Index Medicus*, he might have been able to refer to the authorities quoted by me. Case I.: Follicular inflammation of the intestinal canal, the symptoms being those of cholera infantum (with a plate showing the ulcerations). Necropsy: "Peritoneal surface of viscera healthy; liver light yellow color; gall-bladder distended with bile; and spleen normal. Mucous membrane as follows: That of the stomach of a sienna color, and of a consistence which permitted it to be



scraped off very readily with the finger. On the small intestines it was generally of the same color, but interspersed at distant intervals with patches of injected blood-vessels, but no extravasation. The clusters of muciparous glands or follicles were very distinct to the naked eye, and had their orifices also enlarged and tumid. The same condition of the muciparous follicles prevailed in the large intestine from one end to the other; but they were larger and more tumid, and gave to the mucous coat somewhat the appearance of having been sparingly sprinkled with fine white sand." He expresses uncertainty as to this condition being normal or abnormal.

EBERLE, 1833.

Dr. John Eberle, of Ohio, published, in 1833, "A Treatise on the Diseases and Physical Education of Children."

The book has nothing new or unique in it, and is based upon Dewees' work. He differs from the opinion of Parrish that the dyspnœa in "congestive catarrhal fever" is spasmodic in character, and asserts that it "depends mainly, if not wholly, on great sanguinous engorgement of the pulmonary blood-vessels—a kind of apoplexy of the lungs."

REYNOLDS, 1833.

Dr. Edward Reynolds, of Massachusetts, published an essay, in 1833, "On the Importance of a Knowledge of the Principles of Physiology to Parents and Teachers." He pointed out the dangers to the young of a studious life. The objective symptoms of such a life are well-known to every careful observer. This demonstrates that the modes of education are not yet perfect. The improvements in education have multiplied the means of supplying a literary thirst, and also the temptations to sacrifice health and strength in acquiring knowledge. He does not believe that ill-health is a necessary consequence of study. The failure of health in school children may be attributed to many other causes, as the unfavorable circumstances under which study is performed. It is "crowded rooms; improper hours transgressing upon the period of sleep; positions unfavorable to the freedom of corporeal functions; improper diet; excessive action of some organs, with unnatural repose of others. It is overlooking the peculiarities of the system, dependent upon various ages and different temperaments; tasking the mind with excessive duties, or at unfitting times. It is a spirit of competi-

tion, wholly unworthy the true lover of learning." Such habits are at variance with the laws of physical education. The remedy consists in correcting these abuses.

When it is remembered that the literature on school hygiene began in Germany as late as 1836, with Lorinser's monograph on "The Protection of Health in Schools," we may indulge in a certain amount of national pride that this subject received attention by Reynolds as early as 1833, and it may account, perhaps, for the fact that his native state has model school-rooms and furniture, and is supplied with the best sanitary regulations for schools of any state in the Union.

GERHARD, 1833.

Dr. W. W. Gerhard, of Philadelphia, published, in 1833, two articles; one, "Cases of Rubeola, Followed by Death," and the other, "Cerebral Affections of Children." The first paper is based on fifty fatal cases of measles of short duration, seen in the Hôpital des Enfants Malades, of Paris. The necropsies were carefully made. "There was intense inflammation of the mucous membrane of the air passages, and death was caused by sudden suffocation. The sonority of the chest, and the peculiar character of the respiration, which was not at all bronchial, but stifled, as if the air dilated the vesicles but imperfectly, and, mingled with the bronchial râles, distinguished it from pneumonia. In connection with the variety of morbid respiration, the sonority of the chest may be a little diminished, but the diminution is then general, or nearly so, and can scarcely be confounded with the flatness by percussion over a hepatized lung."

In the fatal cases of cerebral affections, hemorrhages, abscesses, and basilar tubercular meningitis, were some of the lesions found. The following observation is highly interesting in the light of modern pathology: "The coincidence of the disappearance of the external signs of scrofula, and the existence of cretaceous matter in two of the bronchial glands, seem to prove in this, as in one of the preceding cases, that this substance is a form of one of the tuberculous depositions."

Gerhard, who had recently returned from Europe, was the first to record his observations with auscultation and percussion in the pulmonary diseases of children. He clearly defined the physical signs, and excluded croupous pneumonia, but failed to record the correct diagnosis. In announcing his belief in the

identity of scrofula and tuberculosis he offered a theory which gained but little support until the last decade of the nineteenth century.

Dr. Gerhard published other papers in 1834. He was evidently a conscientious student and pathologist. He found tubercles in twenty-seven of thirty cases examined, and particularly mentions the spleen as one of the organs frequently affected. He also studied the pathology of croupous pneumonia in children. "The test of pneumonia in twenty-three cases was the existence of bronchial respiration, crepitus, bronchophony, and a flat sound on percussion. The symptoms in all came on suddenly, and could not, therefore, be confounded with a tuberculous affection of the lungs, much less with pleuritic effusions."

It is a matter of regret that this careful observer confined his writings to a few journal articles.

JACKSON, 1833.

Dr. Samuel Jackson, of Northumberland, Pa., published in 1833, an article on "Scarlatina Maligna Successfully Treated by Cold Water." His child, aged eleven years, desired water above all things, so he determined to give it a fair trial. "She was then permitted to drink the coldest ice-water, and to hold ice in her mouth; but this last experiment was dangerous lest she might swallow it, and bring on spasms of the stomach. It was then enclosed in a gauze bag, and put far into her mouth to be dissolved and swallowed. I felt satisfied with my prescriptions, and she was desired to use the ice freely, and to drink largely of ice-water.

"The good effects were immediate, surprising, incredible, and almost divine. Within a few hours the pulse was reduced from 160 to 120; the circumscribed crimson disappeared from her cheeks; the extremities became warmer as the fauces and stomach were cooled; the whole countenance was changed; the typhus distress left it, and something of the vivacity of common fever supervened."

The children of to-day should have inscribed upon Jackson's tomb: "He gave us cold water when we were parched with fever!"

LEWIS, 1837.

Dr. J. T. Lewis, in November, 1837, published an article on the "Diseases and Management of Children," in which great



stress is laid upon the examination of the character and quantity of the *secretions*. Among other good things he says: "So convinced am I of the importance of rigidly scrutinizing the character of every alvine dejection, that I have not failed to have those which took place in my absence preserved for inspection, and in many instances I have been thereby enabled to determine the cause and character of the disease, when it would otherwise have remained in obscurity." Although Dr. Lewis was only possessed of the facilities for examining the stools macroscopically, nevertheless, he was the first American, or, as far as I know, of any nationality, to point out the clinical value of such observation.

STEWART, 1843.

Dr. James Stewart, of New York, published in 1843 an excellent treatise on the "Diseases of Children." While the nomenclature borders on the pedantic, still the general plan of the book, especially in the classification of the signs of disease of the various systems, is superior to its predecessors. Greater attention than hitherto is paid to morbid anatomy and pathology, and auscultation and percussion are intelligently applied. Stewart is the first American to record his belief in the specific origin of infectious diseases occurring epidemically.

CONDIE, 1847.

Dr. D. Francis Condie, of Philadelphia, published in 1847, "A Practical Treatise on the Diseases of Children." This is a systematic work, prepared with great care, but is not as complete as the advance in the knowledge of diseases at this time would warrant. The statement that *lobular* pneumonia is converted into *lobar* is worthy of note. It is, perhaps, worthy of mention that although Condie was a recognized authority on diseases of children, and his text-book was used in the schools of Philadelphia, nevertheless I cannot find that he was ever connected with any medical college.

MEIGS, 1848.

Dr. J. Forsyth Meigs, lecturer on the diseases of children in the Philadelphia Medical Association, published in 1848, "A Practical Treatise on the Diseases of Children." This is a decided improvement on previous works, especially Condie's. The classification of diseases according to the systems they affect is new and convenient. The division of diseases of the respir-

atory organs into those of the upper air-passages and lungs and pleura is novel. The order of the subjects into *definition, synonym, forms, frequency, causes, anatomical lesions, symptoms, diagnosis, prognosis* and *treatment*, demonstrate the acumen of the author. The physical signs of disease are intelligently discussed. The treatment is up-to-date. The bath is again recommended in scarlatina. The work was a standard text-book for several years, was carried through five editions, the last two by Meigs and Pepper, and its author was the recognized authority on pediatrics. Upon the tablet of distinguished American pediatricists is inscribed the name of the illustrious Meigs.

BECK, 1848.

Dr. J. B. Beck, of New York, published in 1848, an "Essay on Infant Therapeutics." Opium is at one time a stimulant, and at another a sedative. It acts with greater energy on the infant than the adult; but it is more uncertain in its action on the former. Great caution should be exercised in its administration, and only preparations of definite strength should be used. Great harm is constantly being done by the unprofessional use of opium, often disguised in some nostrum. His comments on emetics, mercury, blisters and blood-letting are also worthy of perusal.

MEIGS, 1850.

Dr. Charles D. Meigs, professor of midwifery and diseases of women and children in the Jefferson Medical College, published, in 1850, "Observations on Certain of the Diseases of Young Children," being a course of lectures delivered to his class of students the preceding year, and dedicated to it.

It treats of caput succedaneum, inflammation of the eyes, sore mouth, coryza, bowel complaints, infantile jaundice, dress, cyanosis neonatorum, respiratory disorders, forms of laryngitis, whooping-cough, laryngismus, and scarlatina. The diagnosis of each is particularly discussed. Although the theory of Meigs, as to the non-contagious character of scarlet fever, is not the accepted one to-day, nevertheless his remonstrance against drugging is loudly proclaimed by pediatric lecturers of the present time.

The good work in pediatrics begun by the two Meigs in the fourth decade of this century is being creditably continued by our co-laborer, Dr. Arthur V. Meigs, a former member and one of the founders of this body, who wrote an excellent book on

"Milk Analysis in Infant Feeding," which was published in 1885. Let us hope that the work of a Meigs will illumine the pages of pediatric literature at the close of the twentieth century.

PHILOPEDOS, 1852.

Philopedos, an ex-dispensary doctor, of New York City, published, in 1852, "A Few Remarks about Sick Children, and the Necessity of a Hospital For Them," which are teeming with good common sense. He attributes the excessive mortality among young children, in great measure, to crowded and ill-ventilated houses, and exposes the unsanitary habitations by the memoranda taken when a dispensary physician. In all ordinary cases of destitution, he says, "the child is cared for by some special method, with the single exception of sickness." As the general hospitals are crowded, he urges the establishment of a well-organized hospital for children, because "they require a peculiar mode of management, and the attendants should be *adapted* exclusively to them."

It has been impossible to trace the identity of "Philopedos," but it is safe to assume that he was instrumental in establishing the Child's Hospital and Nursery—the first hospital devoted to children on this continent—which was organized March 1, 1854, and stands to-day as a monument to this unknown writer.

WATSON, 1853.

Dr. John Watson, of New York, wrote a letter to the *New York Medical Times*, September 20, 1853, on "Clinical Observations on the Surgical Diseases of Childhood and Early Life." He is surprised that a special department for the *surgical diseases of children* among the numerous divisions to which surgery has been subjected, has not been created, and says: "the industrial instinct of modern practitioners is proverbial; it shows itself in almost every conceivable form; it attaches itself to almost every department of the profession, and evinces astonishing ingenuity in striking out new paths to notoriety and wealth; and hence the wonder that it should, up to the present moment, have wholly overlooked so promising a field as the surgical pathology of childhood." Not a single author has given this department of surgery even a passing notice.

"We are all aware that the plastic and growing frame of children is in many respects different from that of the adult, and



liable to many incidental vitiations to which the fully developed frame is no longer subject, or subject only in a much less degree."

He discusses injuries of the shoulder-joint, of the elbow, of the knee, leading to atrophy of the lower limb, separation of the shaft from the upper extremity of the tibia, and twisting, bending, and partial fracture of the shaft of the long bones. The consequences of such injuries, especially atrophy of muscles, are intelligently handled.

JACOBI, 1857-1897.

Four decades of continuous scientific work in pediatrics, during which we find him the author of several books and numerous essays; the institutor of pediatric lectures and clinics; the first professor of pediatrics in this country; the founder of the section on diseases of children in the American Medical Association; the founder of the section of diseases of children in the New York Academy of Medicine; a founder, and the first president, of this Society; and the recipient of the highest medical honors at home and abroad, would seem to justify a glimpse into the achievements of A. Jacobi in guiding the stream of pediatric thought in America.

JACOBI, 1858.

Dr. A. Jacobi, of New York, published, in May, 1858, his first paper on children, entitled "Invagination of the Colon Descendens in an Infant, with Repeated Hemorrhages in the Colon Transversum." Jacobi says: "Invagination of the intestines, from a merely anatomical point of view, is not a rare occurrence. Before and in the moment of death, the paralysis of the muscular tissues of the intestines progressing by degrees and sometimes unproportionately, invaginations of the jejunum and ileum are very frequent; indeed, so much so, as to be a very common result of a great many post-mortem examinations. The same alteration is not of the same frequency in the living, but whenever it occurs, it is generally known to be a dangerous disease." He then explains the reasons for the more frequent invagination in the infant, and recites in detail the case which formed the basis of his paper. He made a thorough examination of the abdominal viscera, and gives a minute description of their morbid appearance. The use of high injections of fluid, and the

insufflation of air into the intestines of this case, is evidence that a thinker had stepped upon the stage.

In 1857 he delivered a course of lectures at the College of Physicians and Surgeons, New York, his first lecture being on "Catarrh of the Infantile Larynx." His characteristic modesty is demonstrated in the following words, spoken at that time: "Five years ago (1854) I invented a small oval mirror, in a wooden frame, with a flexible handle, which, when applied to the soft palate and uvula, renders, after some exercise, the insight into the larynx possible. As I seldom afterward used my instrument, and as I, indeed, never thought of rendering it profitable in other cases, and to the profession generally, I certainly do not pretend to have any priority regarding this invention," which Garcia described in 1855. The same year (1859) there appeared, in a work by Noeggerath and Jacobi, his paper "On the Etiological and Prognostic Importance of the Premature Closure of the Fontanelles and Sutures of the Infantile Cranium." This was the beginning of the publication of his studies on rickets, and you are all familiar with the deep interest he takes in this subject thirty-eight years thereafter.

In 1860 the first special chair on diseases of children was established in the New York Medical College, and Jacobi became professor of infantile pathology and therapeutics, and continued in the college until 1865. In 1860, in referring to the action of the New York Medical College in creating the chair of infantile pathology and therapeutics, he says: "The large number of infantile patients in general practice, the difficulty of diagnosing their diseases, the importance of physical diagnosis and close observation applied to their ailments, the modification of physiological, and therefore pathological, actions and symptoms in early life, the care necessary in selecting the remedies and determining their doses in diseases of infancy and childhood, the occurrence of a number of diseases exclusively, or almost so, peculiar to early life, appeared to render this course exceedingly proper."

He expressed his firm conviction that the older and more experienced we become, the more confidence we shall have in the unvarying effects of medicines. The cause of the skepticism as to the virtue of drugs he attributed to "the absence of both an exact and a distinct diagnosis, and of strict indications in the use of medicines. We shall always learn that wherever a medi-

cine is really indicated, a good effect will always follow a good dose in such a manner that this one principle, *few medicines, simple prescriptions, and large doses* will find its full justification."

In 1865 he accepted the professorship of diseases of children in the Medical Department of the University of New York, but resigned in 1870. In 1870 he accepted the position of clinical professor of pediatrics in the Medical Department of Columbia College, and twenty-seven years later he is still found in this school expounding the most recent advancement in scientific medicine.

His more recent writings are so well known that even their enumeration would be supererogatory. The greatest literary achievements of Jacobi excite admiration which becomes veneration when we remember that he refused to renounce allegiance to our country and return to the "Fatherland," from which he had been exiled, even though the chair of pediatrics in one of the greatest universities in the world was the temptation.

In 1857 Jacobi pressed the button which set the pediatric clinic in motion, and in 1897 he has the glorious satisfaction of seeing the fulfillment of his fondest hopes in the universal recognition of pediatrics as a distinct branch of medicine.

Contemporaneous with Jacobi is Dr. J. Lewis Smith, of New York, whose reputation as an authority on the diseases of children has never waned during the past forty years, and whose treatise on pediatrics has been the accepted text-book in every medical school in this country. It is his work on diseases of children that has immortalized his name, and his heart must throb with pride upon realizing that he has been able, after twenty-seven years of active professional life, to issue the eighth edition. Each edition shows that he has kept pace with the medical world.

In 1858 he was physician to the Northwestern Dispensary.

He rapidly rose in prominence, and in 1869 he was curator of the Nursery and Child's Hospital, and professor in Bellevue Hospital Medical College. That his capabilities as a teacher have been appreciated is attested by the fact that he is still professor in the same school in which he began to elucidate the diseases of the young child.

This Society has joined with many other bodies in conferring honors on him, and to-day he probably holds more positions of honor and trust than any living pediatricist.



SMITH, 1858.

Dr. J. Lewis Smith, physician to the Northwestern Dispensary, New York, published in July, 1858, his first paper on diseases of children, entitled, "Report of the Post-Mortem Appearances in Eleven Cases of Cholera Infantum." The results of this writer's careful observations are:

1. That the stomach, though so irritable in the disease, and the liver, in the few instances in which it was examined, did not present any notable alteration from the healthy state.
2. That in all the cases there was well-marked interstitial inflammation. Two died when only five days sick, and yet in both the descending colon presented the inflammatory lesion in a high degree.
3. That the inflammation was not confined to the mucous follicles, as it has been stated to be by some writers; but it extended in patches over the mucous surface.
4. The portion of the intestinal tract in which the inflammation was not intense was, in all the patients, the descending colon, and colitis was the only lesion invariably present.

We are most interested, perhaps, in Dr. Smith's work on "Diseases of Children," the first edition of which appeared in January, 1869. In presenting his work to the world the author exhibited a trait in his personality that has endeared him to many practitioners—of being charitable to those holding opinions differing from his own. "While the author has respected the opinions of previous writers, and has adopted them, so far as they appeared to be correct, he has depended much more for the material of his treatise on clinical observations and the inspection of the cadaver." Novel views have not been presented unless proved by numerous observations.

By comparing the editions of 1869 and 1896, one is struck with the radical changes that have taken place in regard to disease and its treatment. In the former, artificial feeding is disposed of in three pages; in the latter, eleven are devoted to it. In the first edition we find the first record of thermometry as applied to children. The physical signs of disease are well portrayed, as by a master-hand. In this edition the greatest contrast is seen in the pathology and treatment of diphtheria and membranous croup. The advanced views of Smith on these conditions are so well-known that our only interest is in what he taught twenty-seven years ago.

He defined diphtheria to be a "blood disease with a local manifestation." "The exudate consists largely of cells, to wit, plastic nuclei and pus cells mixed with epithelial; with these elements we find amorphous matter and ordinary delicate interlacing fibrillæ.

"By the microscope we are able to detect, in some instances, a confervoid growth in or upon the pseudo-membrane. This is commonly the oidium albicans, or, a plant closely allied to it, or the leptothrix buccalis, and its presence has led some observers to think that the primary and essential part of the adventitious formation is parasitic. Fortunately, so erroneous an idea of the pathology of diphtheria is easily disproved, for in most cases of this disease no vegetable growth can be detected."

In the treatment of croup, inhalations of steam are considered invaluable, and a mixture of potassium chlorate and ammonium muriate, as a substitute for calomel, is recommended for its solvent effect. Here also we find that mixture of ferric chloride and potassium chlorate, which is still revered by many as a specific for diphtheria and croup. He recognizes the self-limited nature of the infectious diseases, and the expectant plan of treatment.

The differential diagnosis of scarlatinal nephritis can be more accurately ascertained by the microscope than by the quantitative test for albumen. "We discover the fibrinous casts, altered epithelial cells and blood corpuscles."

O'DWYER, 1879.

In 1879 Dr. Joseph O'Dwyer, of New York, stepped into the pediatric field, not as a literary genius, but as the originator of a method of treating laryngeal stenosis caused by pseudo-membranous deposits. He spent much time in devising a method that would give better results than tracheotomy, which had not a single recovery to its credit in the New York Foundling Hospital from its establishment in 1869 to the inception of his experiments in 1880. In 1882 the first operated case of croup recovered, an experience that had not been enjoyed by the staff during the past thirteen years. This one recovery stimulated O'Dwyer to renewed efforts in spite of many discouragements thrown in his way. He intubated a girl, aged 4 years, May 21, 1884. "This was the first recovery in the history of intubation, and was, therefore, a very important event." His next seven

cases were fatal, but his faith in his method never flagged, and his experiments were continued.

In February, 1885, a writer says: "The details of operating and the instruments used are not given, as O'Dwyer is still investigating the subject and has not perfected his plan of proceeding."

In November, 1885, another, in discussing intubation, says: "Its (the tube) introduction in the small child is difficult. Even when properly introduced its presence does not insure permanent relief, for the dangers of croup are not confined to those of mechanical obstruction of the larynx. In short, it is very doubtful whether Dr. O'Dwyer's or other's experiments would ever bring us to other conclusions than those of Bouchut in 1858."

In 1886 O'Dwyer received his first public encouragement from one who has since been a loyal supporter of intubation. He predicted "that at no distant day tracheotomy would be entirely superceded by 'tubage of the larynx.'" The last report (1896) of this writer shows 178 recoveries in 503 intubations, or 35.38 per cent. recoveries.

On June 18, 1887, the first case of intubation by O'Dwyer's method performed in Europe, was reported as a recovery. From this time the success of intubation was assured, and to-day it has so far succeeded tracheotomy that the latter is almost universally performed as a last resort.

For a full account of the difficulties encountered by O'Dwyer in perfecting the technique of intubation, the reader is referred to "The Evolution of Intubation," an address delivered before this Society in May, 1896.

To Joseph O'Dwyer belongs the credit of originating and perfecting intubation. For presenting this boon to suffering children, his name will ever be associated with those that adorn the pages of medical literature.

JACOBI, 1880.

In 1880, Dr. A. Jacobi, of New York, published a "Treatise on Diphtheria." The book is a condensed statement of the present state of knowledge of diphtheria, with the author's personal views on its pathology and treatment. Jacobi again demonstrates in this work his careful methods of precise study, judicial discrimination, and accurate application. The author is



far ahead of his contemporaries in his theories, many of which are still accepted.

KEATING, 1889.

In 1889 the "Cyclopædia of the Diseases of Children" appeared. This series of monographs, so ably edited, is a lasting monument of the architectural skill and engineering ability of Dr. John M. Keating, of Philadelphia.

STARR, 1894.

In 1894 "An American Text-Book of the Diseases of Children," was issued. This work consists of a series of articles written by American physicians under the able editorship of Dr Louis Starr, of Philadelphia.

SACHS, 1895.

In 1895, Dr. B. Sachs, of New York, published "A Treatise on the Nervous Diseases of Children." This, the first American work on the nervous diseases of children, gives evidence of the advance that has been made in this particular line. The work is so complete in detail, and yet so comprehensive in scope, that we should feel proud of this achievement in pediatrics. To Sachs our congratulations are extended, and we believe his book will be the authority on this class of diseases in every American medical college.

ROTCH, 1895.

Later in 1895 Dr. T. M. Rotch, of Boston, published "Pediatrics." In this work are embodied the results of scientific experimentation in infant feeding. To Rotch must be accorded the honor of inaugurating an accurate method of feeding infants, by the establishment of milk laboratories. The simplification of the nomenclature of the various diseases marks a new era in pediatrics, and makes it possible for physicians in different localities to work in harmony. This book will always stand as a monument to its author.

HOLT, 1896.

The latter part of 1896, Dr. L. Emmett Holt, of New York, published his work on the "Diseases of Infancy and Childhood." It has been said of Holt that he "lived with the dead." If this be true it is also true that he emerged from the dead-house with a real live book. He has probably enjoyed better opportunities

for the study of morbid anatomy in connection with clinical work than any other pediatricist.

In 1796, Caldwell, in the first article on pediatrics written in America, tried to prove the pathological identity of three distinct diseases by attributing them to a common cause—fever. In 1896 Holt closes the century with a masterpiece.

#### JOURNALS.

In May, 1868, the *American Journal of Obstetrics* appeared. It professed upon its cover to be devoted to the diseases of women and children, but it was some years later when a separate department for the diseases of children was established. Dr. A. Jacobi wrote the first article, in the first number of the first volume, his subject being "On the Pathology and Treatment of the Different Forms of Croup."

In 1884, Dr. William Perry Watson established and issued the first number of the ARCHIVES OF PEDIATRICS, now so ably edited by Dr. Floyd M. Crandall.

In 1895, Dr. Dillon Brown established *Pediatrics*, which is now passing through its second year.

The literary and scientific work of the members of this Society is of the highest intellectual order, and receives the most favorable comment at home and abroad. If the Society is to perpetuate the high standard adopted by its founders, it must zealously guard its portals to prevent the admission of the unworthy. While it is true that centralization in membership should be deprecated in any national organization, it is also true that indiscriminate generalization would eventually lead to its disintegration.

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A MONTHLY JOURNAL DEVOTED TO DISEASES OF  
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EDITED BY

FLOYD M. CRANDALL, M.D.

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